

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number
WO 2004/082472 A1

(51) International Patent Classification?: **A61B 1/06**
(21) International Application Number: **PCT/IL2004/000265**
(22) International Filing Date: **23 March 2004 (23.03.2004)**
(25) Filing Language: **English**
(26) Publication Language: **English**
(30) Priority Data: **155046 23 March 2003 (23.03.2003) IL**
(71) Applicant (for all designated States except US): **GIVEN IMAGING LTD. [IL/IL]; P.O.B 258, Yoqneam Ilite 20692 (IL).**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

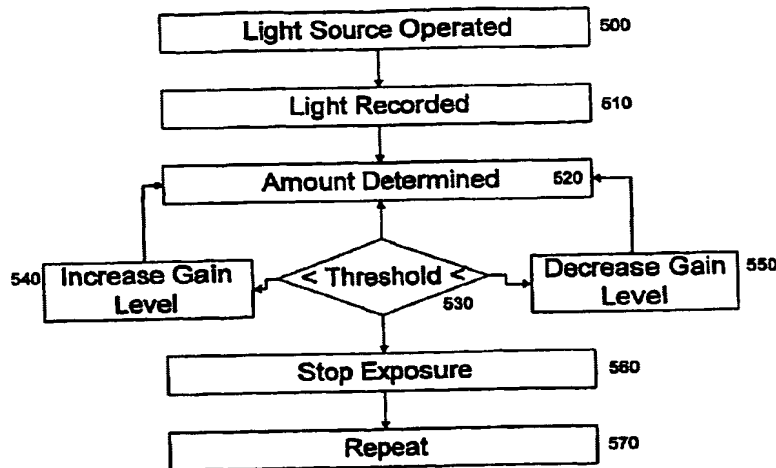
(72) Inventors; and
(75) Inventors/Applicants (for US only): **AVNI, Dov [IL/IL]; 7 Succot Street, Haifa 34525 (IL). GLUKHOVSKY, Arkady [IL/US]; 23541 Via Amado, Santa Clarita, California 91355 (US).**
(74) Agents: **EITAN PEARL LATZER & COHEN-ZEDEK et al.; 7 Shenkar Street, Herzlia 46725 (IL).**

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: **APPARATUS AND METHOD FOR LIGHT CONTROL IN AN IN-VIVO IMAGING DEVICE**



(57) **Abstract:** A device and method for operating an in vivo imaging device (10A) wherein the illumination produced by the device may be varied in intensity and/or duration, and/or the gain level or other parameters may be varied, according to, for example, the amount of illumination produced by the device which is reflected back to the device. In addition, a method is provided for detecting problematic pixels in an imaging device. This method may define and exclude non-functional pixels, based on for example an initial short exposure that enables a threshold saturation level to be reached only for problematic pixels. Moreover, a method is described for determining when an in vivo device enters the body, for example by calculating the progress of a dark frame, based on the light saturation threshold of the dark frame.

WO 2004/082472 A1